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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/910,929	07/24/2001	Herve Le Floch	1807.1619	3572

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FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER
POPHAM, JEFFREY D

ART UNIT	PAPER NUMBER
2137	

DATE MAILED: 03/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/910,929	LE FLOCH, HERVE
	Examiner	Art Unit	
	Jeffrey D. Popham	2137	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 December 2005</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-26</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-26</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>24 July 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Remarks

Claims 1-26 are pending.

Response to Arguments

1.   Applicant's arguments filed 12/8/2005 have been fully considered but they are not persuasive.

Applicant argues that Moskowitz does not teach the determination of a pseudo-random function from a key which depends on a length of the message. As can be seen in Column 3, lines 35-38, preprocessing of a watermark message comprises determining a length of the watermark message. Column 7, lines 29-39 teach determining a pseudo-random function dependent on the creation of a pseudo-random key. Column 7, lines 47-62 teach determining key size based upon the length of the watermark message. Each pseudo-random key is derived from the pseudo-random key generator, which, given the same initializing parameters, will produce the same pseudo random keys. The other sections (Columns 17-19) are referenced as well to show how the pseudo-random key can also be dependent upon the length of the content and that the system can change the CODEC being used by a function of the pseudo-random key.

Applicant also argues that neither Cox nor Nakagawa teach extracting a length of an inserted message based on the digital data. As applicant quoted, "the length of the inserted message is dependent upon, and determined by, the amount of subimages that are contained in the original image". These subimages are part of images within the

digital data, so Cox does teach extracting a length of an inserted message based on the

digital data. In the cited sections of Nakagawa, L refers to the maximum amount of

watermark information that can be stored within the picture data, as can be seen clearly

in Column 13, lines 57-62. The length value is not determined until all of the possibly

watermarked weight coefficients (L) are checked.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1, 3, 8, 10, 17-19, and 22 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Cox (U.S. Patent 5,915,027) in view of Moskowitz (U.S. Patent

5,889,868).

Regarding Claim 8,

Cox discloses a device for inserting a message into digital data

representative of physical quantities, the message including ordered

symbols, comprising:

Means for segmenting the data into regions (Column 4, line 66 to

Column 5, line 1); and

Means for associating at least one region with each symbol to be inserted (Column 5, lines 1-9),

Wherein the means for associating includes:

Means for modulating the symbol in question by a previously determined pseudo-random function in order to supply a pseudo-random sequence (Column 4, lines 55-60), and

Means for adding the pseudo-random sequence to a region in question (Column 5, lines 1-9),

But does not disclose means for determining a pseudo-random function, for each region into which a symbol is to be inserted, from a key which depends on an initial key and on a length of the message.

Moskowitz, however, discloses means for determining a pseudo-random function, for each region into which a symbol is to be inserted, from a key which depends on an initial key and on a length of the message (Column 3, lines 35-38; Column 7, lines 29-62; Column 17, lines 9-31; and Column 18, line 30 to Column 19, line 32). It would have been obvious to one of ordinary skill in the art to incorporate the watermark optimization method of Moskowitz into the digital watermarking system of Cox in order to provide higher levels of protection of copyrights, ownership, etc. via tracking of who owns the digital data.

Regarding Claim 1,

Claim 1 is a method claim that corresponds to system claim 8 and

is rejected for the same reasons.

Regarding Claim 17,

Claim 17 is an apparatus claim that corresponds to system claim 8

and is rejected for the same reasons.

Regarding Claim 18,

Claim 18 is an apparatus claim that corresponds to system claim 8

and is rejected for the same reasons.

Regarding Claim 19,

Claim 19 is a storage medium containing a computer-readable

program claim that corresponds to system claim 8 and is rejected for the

same reasons.

Regarding Claim 22,

Claim 22 is a storage medium containing a computer-readable

program claim that corresponds to system claim 8 and is rejected for the

same reasons.

Regarding Claim 10,

Cox as modified by Moskowitz discloses the device of claim 8, in

addition, Cox discloses means for prior transformation of the digital data

by a reversible transformation (Column 4, lines 55-60).

Regarding Claim 3,

Claim 3 is a method claim that corresponds to system claim 10 and is rejected for the same reasons.

3.   Claims 2, 3, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox in view of Moskowitz, further in view of Sandford (U.S. Patent 5,727,092).

Regarding Claim 9,

Cox as modified by Moskowitz discloses the device of claim 8, in addition, Moskowitz discloses that the key is dependent upon the length of the message and an initial key (Column 3, lines 35-38; Column 7, lines 29-62; Column 17, lines 9-31; and Column 18, line 30 to Column 19, line 32). Cox as modified by Moskowitz does not disclose a number of times the symbol to be inserted has already been inserted into other regions and a ranking of the symbol among the ordered symbols.

Sandford, however, discloses a number of times the symbol to be inserted has already been inserted into other regions and a ranking of the symbol among the ordered symbols (Column 6, lines 53-65). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the sorting technique of Sandford into the digital watermarking system of Cox as modified by Moskowitz in order to minimize the amount of symbols that need to be inserted into the data.

Regarding Claim 2,

Claim 2 is a method claim that corresponds to system claim 9 and

is rejected for the same reasons.

Regarding Claim 10,

Cox as modified by Moskowitz and Sandford discloses the device

of claim 9, in addition, Cox discloses means for prior transformation of the

digital data by a reversible transformation (Column 4, lines 55-60).

Regarding Claim 3,

Claim 3 is a method claim that corresponds to system claim 10 and

is rejected for the same reasons.

4.   Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cox in

view of Moskowitz, further in view of Kunimoto (U.S. Patent 5,303,236)

Cox as modified by Moskowitz does not disclose the setup of the

computer system running from the program from above.

Kunimoto, however, discloses a system comprising:

A microprocessor (Column 9, line 52);

A read-only memory including a program for processing the data (Column

9, lines 53-54); and

A random-access memory including registers suitable for recording

variables modified during running of the program (Column 9, lines 54-55). It

would have been obvious to one of ordinary skill in the art at the time of

applicant's invention to incorporate the computer system of Kunimoto into the

digital watermarking system of Cox as modified by Moskowitz in order to use a

widely known and available computer system for the program from above.

5.   Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Cox in view of Moskowitz, further in view of Mahe (U.S. Patent 6,459,685)

Regarding Claim 20,

Cox as modified by Moskowitz discloses the storage medium of

claim 19, in addition, Cox discloses a device for inserting a message into

digital data representative of physical quantities, the message including

ordered symbols, comprising:

Means for segmenting the data into regions (Column 4, line 66 to

Column 5, line 1); and

Means for associating at least one region with each symbol to be

inserted (Column 5, lines 1-9),

Wherein the means for associating includes:

Means for modulating the symbol in question by a previously

determined pseudo-random function in order to supply a pseudo-random

sequence (Column 4, lines 55-60), and

Means for adding the pseudo-random sequence to a region in

question (Column 5, lines 1-9);

And Moskowitz discloses means for determining a pseudo-random

function, for each region into which a symbol is to be inserted, from a key

which depends on an initial key and on a length of the message (Column
3, lines 35-38; Column 7, lines 29-62; Column 17, lines 9-31; and Column
18, line 30 to Column 19, line 32).

Cox as modified by Moskowitz does not disclose the use of a
detachably mountable storage medium.

Mahe, however, discloses the use of a detachably mountable
storage medium that holds a computer-readable program that is mounted
on a device for encoding data (Column 8, lines 1-6). It would have been
obvious to one of ordinary skill in the art at the time of applicant's invention
to incorporate the detachably mountable storage medium of Mahe into the
digital watermarking system of Cox as modified by Moskowitz in order to
obtain the properties of a detachably mountable storage medium, since
the very nature of a detachably mountable storage medium, such as a
CD-ROM, is that it is portable and easily switched for another.

Regarding Claim 21,

Cox as modified by Moskowitz does not disclose that the storage
medium is a floppy disk or a CD-ROM.

Mahe, however, discloses that the storage medium is a floppy disk
or a CD-ROM (Column 8, lines 1-6). It would have been obvious to one of
ordinary skill in the art at the time of applicant's invention to incorporate
the detachably mountable storage medium of Mahe into the digital
watermarking system of Cox as modified by Moskowitz in order to obtain

the properties of a detachably mountable storage medium, since the very

nature of a detachably mountable storage medium, such as a CD-ROM, is

that it is portable and easily switched for another.

6. Claims 4-7, 11-14, 17, 18, 23, and 26 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Cox (U.S. Patent 5,915,027) in view of Nakagawa (U.S. Patent

6,104,826).

Regarding Claim 11,

Cox discloses a device for extracting a message from digital data

representative of physical quantities, the message including ordered

symbols, comprising:

Means for segmenting the data into regions (Column 5, line 67 to

Column 6, line 3);

Means for extracting a length of the inserted message (Column 9,

line 21 to Column 10, line 3); and

Means for extracting the inserted message (Column 6, lines 6-14).

Nakagawa also discloses means for extracting a length of the

inserted message (Column 13, line 10 to Column 14, line 4). It would

have been obvious to one of ordinary skill in the art at the time of

applicant's invention to incorporate the watermark extraction procedure of

Nakagawa into the digital watermarking system of Cox in order to prevent

a third party from modifying the watermark and to keep the picture from

deteriorating in quality (Column 3, lines 9-29).

Regarding Claim 4,

Claim 4 is a method claim that corresponds to system claim 11 and

is rejected for the same reasons.

Regarding Claim 17,

Claim 17 is an apparatus claim that corresponds to system claim 11

and is rejected for the same reasons.

Regarding Claim 23,

Claim 23 is a storage medium containing a computer-readable

program claim that corresponds to system claim 11 and is rejected for the

same reasons.

Regarding Claim 26,

Claim 26 is a storage medium containing a computer-readable

program claim that corresponds to system claim 11 and is rejected for the

same reasons.

Regarding Claim 18,

Claim 18 is an apparatus claim that corresponds to system claim 11

and is rejected for the same reasons.

Regarding Claim 12,

Cox as modified by Nakagawa discloses the device of claim 11, in

addition, Nakagawa discloses that the means for extracting the length of

the inserted message includes:

Means for selecting a set of length values (Column 13, line 10 to

Column 14, line 4),

Means for calculating a correlation value between the message and

the digital data, for each of the length values (Column 13, line 10 to

Column 14, line 4), and

Means for determining a local maximum from among the correlation

values (Column 13, line 10 to Column 14, line 4).

Regarding Claim 5,

Claim 5 is a method claim that corresponds to system claim 12 and

is rejected for the same reasons.

Regarding Claim 13,

Cox as modified by Nakagawa discloses the device of claim 11 or

12, in addition, Nakagawa discloses that the means for extracting the

length of the inserted message is configured to perform extraction while

processing F times fewer coefficients than included in the digital data

(Column 13, line 10 to Column 14, line 4).

Regarding Claim 6,

Claim 6 is a method claim that corresponds to system claim 13 and

is rejected for the same reasons.

Regarding Claim 14,

Cox as modified by Nakagawa discloses the device of claim 13, in

addition, Nakagawa discloses:

Means for determining a total number of coefficients to be

considered (Column 13, lines 35-44);

Means for selecting a maximum number of coefficients

corresponding to a same inserted symbol (Column 13, lines 45-56); and

Means for reiterating processing of the means for selecting, for

another symbol, if the total number of coefficients to be considered has

not been reached (Column 13, line 57 to Column 14, line 4).

Regarding Claim 7,

Claim 7 is a method claim that corresponds to system claim 14 and

is rejected for the same reasons.

7.   Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cox in

view of Nakagawa, further in view of Kunimoto.

Cox as modified by Nakagawa does not disclose the setup of the

computer system running the program from above.

Kunimoto, however, discloses a system comprising:

A microprocessor (Column 9, line 52);

A read-only memory including a program for processing the data (Column

9, lines 53-54); and

A random-access memory including registers suitable for recording variables modified during running of the program (Column 9, lines 54-55). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the computer system of Kunimoto into the digital watermarking system of Cox in order to use a widely known and available computer system for the program from above.

8.   Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox in view of Nakagawa, further in view of Mahe.

Regarding Claim 24,

Cox as modified by Nakagawa discloses the storage medium of claim 23, in addition, Cox discloses a device for extracting a message that includes ordered symbols from digital data representative of physical quantities, comprising:

Means for segmenting the data into regions (Column 5, line 67 to Column 6, line 3);

Means for extracting a length of the inserted message (Column 9, line 21 to Column 10, line 3); and

Means for extracting the inserted message (Column 6, lines 6-14);

Nakagawa also discloses means for extracting a length of the inserted message (Column 13, line 10 to Column 14, line 4).

Cox as modified by Nakagawa does not disclose the use of a detachably mountable storage medium.

Mahe, however, discloses the use of a detachably mountable storage medium that holds a computer-readable program that is mounted on a device for encoding data (Column 8, lines 1-6). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the detachably mountable storage medium of Mahe into the digital watermarking system of Cox as modified by Moskowitz in order to obtain the properties of a detachably mountable storage medium, since the very nature of a detachably mountable storage medium, such as a CD-ROM, is that it is portable and easily switched for another.

Regarding Claim 25,

Cox as modified by Nakagawa does not disclose that the storage medium is a floppy disk or a CD-ROM.

Mahe, however, discloses that the storage medium is a floppy disk or a CD-ROM (Column 8, lines 1-6). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the detachably mountable storage medium of Mahe into the digital watermarking system of Cox as modified by Moskowitz in order to obtain the properties of a detachably mountable storage medium, since the very nature of a detachably mountable storage medium, such as a CD-ROM, is that it is portable and easily switched for another.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey D. Popham whose telephone number is (571)-272-7215. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on (571)272-3865. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeffrey D Popham
Examiner
Art Unit 2137

EMMANUEL L. MOISE
SUPERVISORY PATENT EXAMINER